ABSTRACT

An instruction decoder identifies, for each instruction, an operational block involved in the execution of the instruction and an associated heat release coefficient. The instruction decoder stores identified information in a heat release coefficient profile. An instruction scheduler schedules the instructions in accordance with the dependence of the instructions on data. A heat release frequency adder cumulatively adds the heat release coefficient to the heat release frequency of the operational block held in the operational block heat release frequency register as the execution of the scheduled instructions proceeds. A heat release frequency subtractor subtracts from the heat release frequency of the operational blocks in the operational block heat release frequency register in accordance with heat discharge that occurs with time. A hot spot detector detects an operational block with its heat release frequency, held in the operational block heat release frequency register, exceeding a predetermined threshold value as a hot spot. The instruction scheduler delays the execution of the instruction involving for its execution the operational block identified as a hot spot.